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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,576	07/28/2003	John LeRoy Parker JR.	8245.057	5022

30589 7590 07/18/2006

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,576

Applicant(s)

PARKER ET AL.

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-60 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 46-60 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

In view of the amendment filed on April 14th 2006, the Terminal Disclaimer filed on April 14th 2006 is acknowledged. The pending claims however continue to be unpatentable as following:

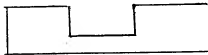
Drawings

The drawing filed on April 14, 2006 is acceptable, however the "New Sheet" drawing filed on May 03, 2006 was not based on the drawing filed on April 14, 2006. Correction is required.

Claim Rejections - 35 USC § 112

1. Claims 46, 50 and 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 46, 50 and 53, it is vague and indefinite as to whether the phrase "a blind via extending from said first surface" is referring to a via NOT going through the total thickness of the substrate; i.e.



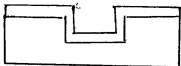
Since this structure



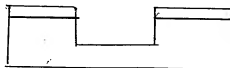
can also be a form of blind via.

Clarification is required.

Furthermore, in claims 50 and 53, the phrase "a first conductive layer extending over substantially all of the first surface" is indefinite, as it is unclear whether or not this "first surface" is referring to the surface in the blind via hole?



or



In claim 53, the phrase "the conductive material plugging the blind via.....has no opening extending...." Is structurally indefinite. Furthermore, it is unclear what is "an end portion" of the conductive material is referring to? Clarification is required.

In claims 49 and 50, the phrases "greater than approximately" and "exceeding approximately" are indefinite, as it is unclear whether it greater than, exceeding or approximately? Clarification is required.

Claim Rejections - 35 USC § 103

2. Claims 46-60 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mizumoto et al (US 5662987).

Due to the invention is unclear, with respect to the prior art rejections below, the claims will be given the broadest possible interpretation in view of the specification.

Mizumoto teaches a multilayer printed wiring board comprised of two or more stacked layers of with conductive blind via holes (Figs 12, 13 and 19).

Each layer comprised of an insulating layer with a via hole formed in the thickness direction of the insulating layer. A first conductive layer formed from the top surface of the insulating layer and plating the via hole surface and closed the bottom side (here refer to 2nd side), the examiner is taking the position that this is a blind via hole (Fig. 19).

Electrically conductive material (530) is filled into the blind via, followed by plating a second conductive layer (560). The second conductive layer is plated over the electrically conductive material.

The electrically conductive material is a conductive paste comprised of copper filler and a resin material (col 4 L 21-25).

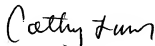
Mizumoto teaches the concept of the present invention but is silent about the thickness of the 1st conductive layer.

The examiner is taking the position that one skill in the art would choose a workable thickness for the invention because it is just a matter of design choice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Cathy Lam
Primary Examiner
Art Unit 1775